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Inventors: Yuichi YAMATO et al  
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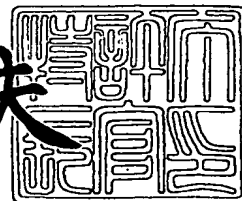
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出 願 人  
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特許庁長官  
Commissioner,  
Japan Patent Office

今 井 康 夫



出証番号 出証特 2 0 0 4 - 3 0 0 0 8 1 8

【表 1】

品名	製造会社	重量部				
		実施例 1	実施例 2	実施例 3	比較例 1	比較例 2
NBRポリマN240S *1	JSR (株)	100	100	100	100	100
ステアリン酸	日本油脂 (株)	1	1	1	1	1
PEG#4000	日本油脂 (株)	1	1	1	1	1
ニップシールVN3 *2	日本シリカ工業 (株)	5	0	5	0	0
ノーベライトA	H東粉化工業 (株)	72	0	0	72	0
タマパールTP-123	奥多摩工業 (株)	0	72	72	0	0
白艶華CC	白石工業 (株)	0	0	0	0	72
R-650	堺化学 (株)	26	26	26	26	26
ノクラックNS30	大内新興化学工業 (株)	1	1	1	1	1
DIDP	協和発酵 (株)	20	20	20	20	20
ナイパーBW *3	日本油脂 (株)	2.5	2.5	2.5	2.5	2.5
パーヘキサ25B-40 *4	日本油脂 (株)	2.5	2.5	2.5	2.5	2.5
ネオセルボンN1000S *5	永和化成 (株)	5.0	5.0	5.0	5.0	5.0
VESTA-18	井上石灰工業 (株)	5.0	5.0	5.0	5.0	5.0

## 【0028】

注) \*1: NBRポリマ  
 \*2: 白色充てん材  
 \*3: 低温型架橋剤  
 \*4: 高温型架橋剤  
 \*5: 発泡剤

## 【0029】

表1の配合ゴムをφ50のゴム押出機で押出し、断面30×25mm、長さ150mmの未加硫ゴム柱状体を作った。

## 【0030】

前記未加硫ゴム柱状体をHA温度=200℃; UHF出力=0.5kw; フリー状態で加熱加硫発泡させ、寸法=70×45×230mmの加硫スポンジゴム柱状体を作った。

## 【0031】

前記加硫スポンジゴム柱状体を、3mm間隙の2軸ロールの間にn回通し、全体を均一に連通化し、スポンジゴム原反を作った。

## 【0032】

この本発明実施例1, 2, 3のスポンジゴム原反と比較例1, 2のスポンジゴム原反と従来のラテックスパフ(Lxパフ)(比較例3)並びに単泡パフ(比較例4)の比較は、表2の通りである。実施例1, 2, 3と比較例1, 2の製造条件は、通しロール回数n以

出証特2004-3000818



JP 61073607A Translation

## SPECIFICATION

1. Title of the Invention:

MAKEUP PUFF APPLICATOR

2. What is claimed is:

Makeup puff applicator formed by impregnating a water soluble isocyanate compound to a soft foamed material.

3. Detailed Description of the Invention:

Industrial Field

This invention relates to a makeup puff applicator used to apply a solid foundation to human skin, which feels cool satisfactorily in water-humidified state and is quite comfortable without being solidified in dry state.

Prior Art

Heretofore, there have been known foamed materials of POVAL, NBR, urethane, etc. as a makeup puff applicator. The makeup puff applicator is a tool to apply a solid foundation to skin and is used in a manner of simply spreading the foundation thereon when temperature is not high in fall, winter and spring, or a manner of spreading it after the puff is once humidified with water in hot summer season, thereby feeling cool to skin. This is the reason why such the manner is favorably used. Thus, it is necessary that a makeup puff applicator useful for all seasons has improved spreadability of a solid foundation and soft feel both in the water-humidified state and the dry state, and also constant cool feel in the water-humidified state. From this point of view, POVAL is popular as the makeup puff applicator because of its good feel in the water-humidified state, but is solidified in the dry state makes it useless. On the other hand, NBR, urethane, etc. are an outstanding material for a puff used in the dry state because of their softness and good feel to skin, but they are less water-retentive in nature so that water is not applied to skin uniformly in the water-humidified state, which causes poor cool feel as a defect thereof.

Problems to be solved by the Invention

A requirement of satisfactory cool feel is that the makeup puff applicator has water-retentive properties suitably but not enough to retain an excess amount of water such as hand-squeezed one in the water-humidified state and appropriately spread a solid foundation thereon, which is then applied to skin while keeping a certain amount of water constantly and uniformly. The above-mentioned requirement is satisfied by the invention, thereby resulting in sufficient cool feel.

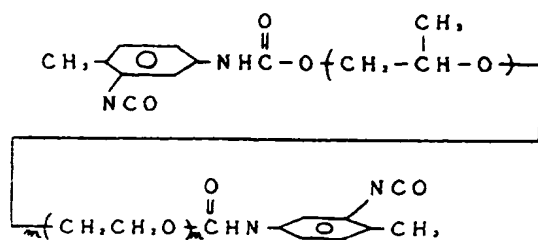
#### Means to solve Problems

According to the invention, problems as above described are solved by impregnating a water soluble isocyanate compound to a soft foamed material. The water-soluble isocyanate compound used in the invention means those compounds of high hydrophilic nature prepared by high-polymerizing polyisocyanate using a chain lengthening agent containing at least ethylene glycol, glycerin, hydrophilic glycol, etc.; and a composition of the water soluble isocyanate which comprises a reaction catalyst such as amine and polyalcohol as an auxiliary such as glycerin, ethylene glycol and polyethylene glycol. The soft foamed material used in the invention may be any foam of soft and good feel which is seldom deteriorated by a solid foundation and includes that of NBR, urethane, etc.

In order to impregnate the isocyanate compound to the soft formed material, there may be used a method in which the foam is impregnated in the liquid isocyanate followed by pressing or rolling to drain the liquid, or the foam is inserted between rolls applied with the liquid isocyanate on their surface to transfer and impregnate it to the foam. In another embodiment, the liquid isocyanate compound may be sprayed on the soft formed material.

#### Example 1

A NBR foamed material of 0.14 in density and 9 mm in thickness was impregnated in a liquid mixture of urethane prepolymer represented by the following structural formula:



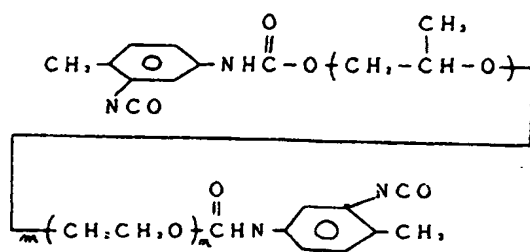
NCO content	3.5 to 3.8 wt. %
PO/EO ratio	20 : 80

and triethanolamin containing these components in the weight proportion of 100 : 1, which was press-drained to impregnate 10 wt. % of the residual liquid in the foam and then heated in a dryer at 60°C for 24 hours to yield a soft foamed material for makeup. The thus yielded foam was soft and good feel in the dry state, while it exhibited more improved cool feel than that of a conventionally known NBR formed material when both foams were humidified with water, squeezed by hand and pressingly slid on skin to compare their touch.

The reason of improved cool feel of the present makeup puff applicator is that absorbability of the NBR foamed material is improved by the isocyanate compound, thereby soaking water little by little but constantly through the surface layer of the NBR foam by pressure of the puff pressed to skin and feeling cool to skin continuously.

#### Example 2

An ester type urethane foam of 0.18 density and 8 mm in thickness was inserted between rolls of polypropyrene blanket passed through liquid urethane prepolymer represented by the following structural formula:



NCO content	3.5 to 3.8 wt. %
PO/EO ratio	20 : 80

to transfer the liquid prepolymer to the foam, which was heated and reacted in a dryer at temperature of 60°C and humidity of 90 % to yield a makeup puff

applicator impregnated with the water soluble isocyanate compound.

The thus yielded makeup puff applicator and conventional one made of NBR foam were humidified with water, squeezed by hand and pressingly slid on skin to compare their cool feel. As a result, the present makeup puff applicator exhibited more improved cool feel compared with that of the conventional one. The reason of such an improvement is similarly considered as described in Example 1.

#### Effects of the Invention

As has been described above, the present makeup puff applicator is formed by impregnating a water soluble isocyanate compound to a soft foamed material, thereby improving absorbability of a NBR foamed material is improved, soaking water little by little but constantly through the surface layer of the NBR foam by pressure of the puff pressed to skin and feeling cool to skin continuously. Accordingly, the makeup puff applicator of the invention has satisfactory water-retentive properties but does not retain an excess amount of water such as hand-squeezed one in the water-humidified state and can appropriately spread a solid foundation thereon, which is then applied to skin while keeping a certain amount of water constantly and uniformly. As a result, satisfactory cool feel to skin is obtainable.